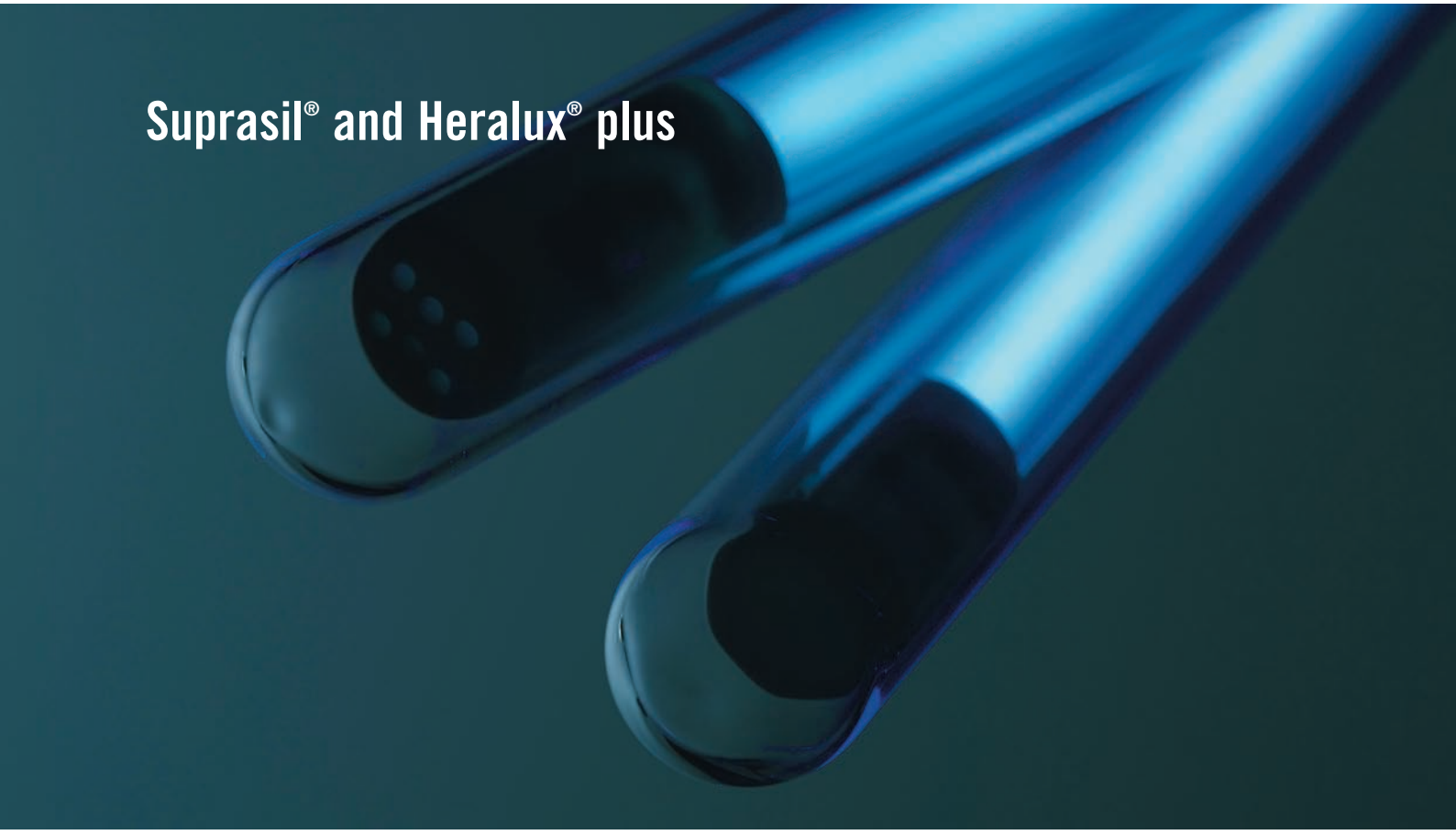
Heraeus



Premium Quartz Glass Products for UV Disinfection and UV Cleaning Applications

UV disinfection, UV cleaning

Disinfection and cleaning with ultraviolet light is a cost-effective and environmentally-friendly alternative to conventionally used chemical processes.

As a result UV disinfection and UV cleaning technologies are becoming more and more important in drinking, waste and process water treatment.

In addition deep UV light can be efficiently used to generate ozone from the oxygen in the ambient air which is used for the oxidation of air impurities. Examples are cleaning of exhaust air and destruction of airborne grease in commercial kitchens, as well as surface cleaning in LCD and semiconductor industries.

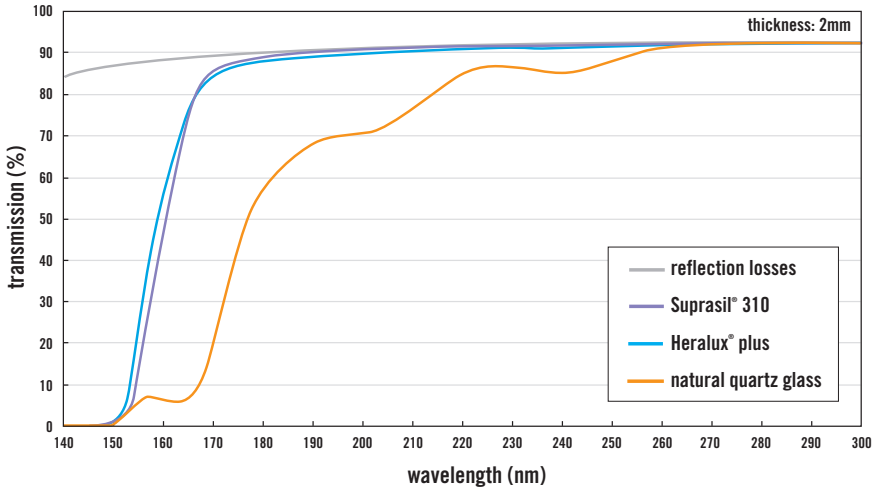
In high demanding cleaning systems efficient light source solutions help to increase reliability and life-time and lower the costs of operation.

Heraeus features:

- Own cleaning and purification capabilities for ultra pure raw material
- Standard grades and premium grades are available
- Customized products:
  - Tubes furnace cut or machine cut
  - Fabricated tubes (fire polished, domed, flared)
- Flexible order quantities
- Technical support
- Flexible size range: OD 3 – 300 mm

Highest Transmission, Longest Life-Time

Typical transmission spectrum including reflections losses



Crack formation in a natural quartz glass tube irradiated for about 300 hours with 172 nm UV radiation.

Heraeus provides premium quartz glass tubes for UV and deep UV.
These tubes have a superior transmission and a significantly improved life-time compared to standard natural quartz glass. Natural quartz glass that is irradiated with UV or deep UV light will show cracks after long irradiation times. Cracking may lead to damage of lamps or sleeves. In addition the UV transmission is reduced over time. Heraeus Suprasil 310 and Heralux plus or even Heralux vuv with excellent UV transmission do not show crack formation and help to increase the operation time of UV systems.
Especially in deep UV lamps operating at 185 nm or 172 nm Suprasil 310 and Heralux vuv provide significant performance advantages compared to natural quartz glass.

Typical impurity content in weight ppb (µg/g)

	Li	Na	K	Mg	Ca	Fe	Cu	Cr	Mn	Al
Heralux plus	0.65	0.20	0.05	0.05	0.05	0.20	< 0.05	< 0.05	< 0.05	12.00
Suprasil 310	< 0.0005	< 0.010	< 0.010	< 0.005	< 0.015	< 0.005	< 0.005	< 0.005	< 0.005	< 0.010

The data given here is correct for September 2006 and is subject to change.

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